

# The Effect Of Environmental Performance On Firm Value Using Financial Performance As Mediator Variable

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## ABSTRACT

**Purpose:** This study aims to examine the effect of environmental performance on firm value directly or indirectly by employing financial performance as a mediator variable.

**Design/methodology/approach:** This research employs quantitative research. The population of the research is all non-financial companies on the Indonesia Stock Exchange (IDX) in the 2014-2019 period with a sample of 282 firm-years. The employed data analysis technique is Warp PLS 6.0 carried out in the two testing stages; the testing of the direct and the indirect effects of environmental performance variable on firm value.

**Findings:** Environmental performance has a significant positive effect on firm value; environmental performance has no effect on financial performance; financial performance has a significant positive effect on firm value; and financial performance is not proven as a variable that mediates the effect of environmental performance on firm value.

**Research limitations:** The measurement of financial performance employs only one proxy; ROE. Measurement of financial performance may use various proxies to produce more accurate findings.

**Practical implications:** This research provides an overview of the importance of implementing environmental performance for a company in order to increase firm value or company reputation among investors in particular and society in general.

**Originality/value:** This research is a development of previous studies, which produced varying research results, with the addition of financial performance as a mediator variable.

**Paper type:** This research is categorized as a research paper.

**Keywords:** *Environmental Performance, Financial Performance and Firm Value*

## I. INTRODUCTION

Firm value is vital and required in increasing the benefit of shareholders and stakeholders. Hence, the management of a company must know the factors affecting this value. Firm value is indicated by the market value of a company as well as the price when a company takeover occurs. One of the factors that influence firm value is environmental performance. According to Cormier & Magnan (2007), companies that have responsibility toward the environment are considered as transparent, credible, securer and attractive in terms of future financial prospects for investors and other stakeholders. Furthermore, environmental performance constructively affects the market value development and the cost reduction. Yadav et. al (2015) tested the influence of environmental performance on firm value by implementing the event study approach on Newsweek's announcement of 2012 Green Rankings for large US companies. The study found that the announcement became positive news for investors and led to a significant positive impact on Standardized Cumulative Abnormal Returns (SCARs). Also, the company's Green Score and Green Rank provide positive impacts on their performance in the stock market.

Environmental performance management is the effort in preventing environmental pollution by applying "Green Industry". The goal is to avoid the future materialized consequences because of the environmental aspect and is directed to "Zero Impact" (Tjahjono, & Eko, 2013). The public trusts and is satisfied with the products of companies that have a good environmental performance. The bad environmental performance will affect the community who choose to avoid the products which are considered unfriendly to the environment and may damage the ecosystem (Ikhsan & Muharam, 2016).

However, the prior studies on environmental performance and firm value have resulted varying findings. Moneva & Cuellar (2009) find that non-financial disclosures like environmental policies have no effect on firm value. In the meantime, Jacobs et.al (2010) find the diverse results; the market does not react significantly to the aggregated Corporate Environmental Initiatives (CEI) and Environmental Awards and Certification (EAC) announcement, only in some sub-categories such as ISO 14001 certification, which is associated with positive market reaction; but voluntary emission reduction is associated with negative market reaction.

Based on the varying results of the previous studies, the researchers deduce that environmental performance does not directly affect firm value. In this study, researchers will link environmental performance variable with firm value through financial performance. Financial performance is considered valid to be a mediator variable since good environmental performance will improve financial performance so that company value will be achieved. Companies must develop a long-term strategy on environmental management in their business operations in order to improve the long-term financial performance and enhance the company's environmental image as a substantial intangible value (Rao & Holt 2005; Yadav et.al, 2015). Environmentally friendly companies support the efficiency of other production processes. Another essential factor is that successful companies spend more on environmentally friendly technologies (Filbeck & Gorman 2004). Good environmental performance has a significant affiliation with good economic performance (Al-Tuwaijri et.al, 2004). Good environmental performance provides benefits to the company in terms of revenue, costs and others (Ruf et.al, 2001). Eco-conscious customers are willing to pay dearly for contentment because they believe having contributed to environmental improvement (Amato & Amato, 2012). Thus, company revenue will rise and costs will be reduced so that the company gets an increase in profits which are directly linked to financial performance improvement. Better financial performance is a positive signal for investors to buy shares. Based on the signaling theory, information or disclosures issued by the company will be a guide for investors regarding the company future performance prospects (Besley & Brigham, 2008). Information about high financial performance will create investors' perceptions of the company success, which is reflected in high share prices, so that the company value is high and increases market confidence not only in the company current performance, but also the company prospects in the future. (Modigliani & Miller (1958) state that firm value is determined by the earnings power of the company's assets. The positive effect of earnings power indicates that a greater profit and a more efficient turnover of assets occur if the firm has a higher earnings power which increases firm value. The following is the research hypothesis:

H1: Environmental performance has a positive effect on firm value

H2: Environmental performance has a positive effect on financial performance

H3: Financial performance has a positive effect on firm value

H4: Financial performance mediates the effect of environmental performance on firm value

## II. METHODOLOGY

This study is an empirical study examining the role of financial performance variable in mediating the relation between environmental performance and firm value. The data used is secondary data taken from the Indonesia Stock Exchange (IDX); manufacturing companies registered in the 2014 - 2019 period with a sample of 282 firm-years.

The dependent variable in this study is firm value as proxied by Price to Book Value (PBV), the independent variable used is environmental performance (EP) and the mediator variable is financial performance (FP).

Table 1. Operational variables and measurement

Variables	The definition of Operational variables	Variables Measurement
<b>The dependent variable:</b> Firm value	The company performance is reflected by the stock price which is formed by the supply and demand of the stock market, which reflects the public's assessment of the company's performance (Harmono, 2009 : 233)	PBV is calculated by comparing the market price per share with book value per share (Brigham & Houston, 2006)

<b>The independent variable:</b> environmental performance	The company's strategy in reducing negative impacts on the environment will create added value for the company to investors (Mardiana & Wuryani, 2019)	This is measured using the company's achievements in participating in PROPER (corporate performance rating assessment) program. PROPER performance rating system includes five colors; gold indicates a score of 5, green indicates a score of 4, blue indicates a score of 3, red indicates a score of 2, black indicates a score of 1 (Peraturan Menteri Lingkungan Hidup, 2014)
<b>The mediator variable :</b> Financial performance	The company financial condition in a certain period is shown by indicators of capital adequacy, liquidity and profitability (Jumingan, 2011)	ROE is calculated by comparing net income after tax to total equity (Brigham & Houston, 2011)

The analysis in this study uses path analysis because its capability to test the variables simultaneously as well as estimates the direct and indirect effects. The data will be processed using Warp PLS 6.0 program.

The procedure for testing the financial performance hypothesis as a variable that mediates the effect of environmental performance on firm value is carried out in two steps (Baron & Kenny, 1986):

1. Estimating the direct effect of environmental performance on firm value.
2. Estimating the indirect effect simultaneously by the following path pattern;

*environmental performance → financial performance → firm value.*

The conclusions related to the roles of mediator variable are as follows:

1. If the effect of environmental performance on firm value does not change and remains significant when the financial performance variable is included in the model as an additional predictor variable, then the variable as a mediator is not supported.
2. If the effect of environmental performance on firm value decreases but remains significant when the financial performance variable is included as an additional predictor variable, then this variable is supported as partial mediation.
3. If the effect of environmental performance on firm value decreases to a point where it is not statistically significant when the financial performance variable is included as an additional predictor variable, then the variable is supported as full mediation.

### III. RESULT AND DISCUSSION

Table 2 Model fit and quality indices below show the results of *model fit* and *weak* on several criteria. Model fit analysis has many criteria, researchers do not have to employ all of these criteria to see the suitability of the research model, it is better to have more than one model fit test that meets the criteria (Widarjono, 2010). The interpretation of model fit indicator depends on the objectives of SEM analysis. If the aim is only to test hypotheses on the relationship between latent variables, then model fit indicator becomes less important (Sholihin & Ratmono, 2013).

Table 2. Model Fit and Quality Indices

Criteria	Fit Criteria	Analysis Results	Description
Average Path Coefficient (APC)	p-value $\leq 0.05$	0.003	Model Fit
Average R-Squared (ARS)	p-value $\leq 0.05$	0.102	Weak
Average Adjusted RSquared (AARS)	p-value $\leq 0.05$	0.115	Weak
Average Block VIF (AVIF)	Acceptable if $\leq 5$ ; Ideally $\leq 3.3$	1.011	Model Fit
Average Full Collinearity (AFVIF)	Acceptable if $\leq 5$ ; Ideally $\leq 3.3$	1.013	Model Fit

Goodness Tenenhaus	Small $\geq 0.1$ ; Medium $\geq 0.25$ ; Large $\geq 0.36$	0.225	Weak
Sympson's Paradox Ratio (SPR)	Acceptable if $\geq 0.7$ ; Ideally = 1	1	Model Fit
R-Squared Contribution Ratio (RSCR)	Acceptable if $\geq 0.9$ ; Ideally = 1	1	Model Fit
Statistical Suppression Ratio (SSR)	Acceptable if $\geq 0.7$	1	Model Fit
Nonlinear Bivariate Causality Direction Ratio (NLBCDR)	Acceptable if $\geq 0.7$	0.667	Weak

Table 3. The results of testing the direct effect of environmental performance on firm value

Coefficient	Path Coeff.	S.E	Sig.
EP $\rightarrow$ FV	0.272	0.059	<0.001

Source : processed data

Table 4. The results of testing the indirect effects of environmental performance on financial performance and firm value

Coefficient	Path Coeff.	S.E	Sig.
EP $\rightarrow$ FV	0.254	0.059	<0.001
EP $\rightarrow$ FP	0.033	0.061	0.296
FP $\rightarrow$ FV	0.163	0.060	0.003

Source : processed data

EP : Environmental Performance

FP : Financial Performance

FV : Firm Value

Based on table 4, the result of testing the effect of environmental performance on firm value shows a significant positive effect. This means that the higher the environmental performance, the greater the company value. The result of this study is in accordance with the signaling theory which explains that information about environmental performance disclosed by companies will affect firm value which is reflected in PBV value increase (Besley & Brigham, 2008). Companies with high environmental performance will have an impact on company performance in the future. Investors will be interested in investing their capital in companies that care about the environment. The way investors view a company environmental initiatives is an important factor in determining their evaluation by its reactions to the stock market. Investors expect the company to create value with good environmental performance, so they will respond by bidding on the company's share price. The score of environmental impact that measures the environmental damage from the company operational activities is the most influential factor in increasing firm value (Yadav et.al, 2015). Besides providing real benefits, improving environmental performance will also enhance the company image (Rao & Holt, 2005).

The results of testing the effect of environmental performance on financial performance show not significant positive effect. Environmentally friendly Products or services are usually sold at a higher price, so that most consumers in Indonesia do not like them. Most Indonesian consumers consider price more than the nature of environmentally friendly products or services, so that environmental performance will not affect financial performance (Sarumpaet, 2005). Social and environmental responsibility or better known as corporate social responsibility (CSR) is still a concept that will be applied in developing countries even though consumers have a tendency to ignore and do not support the programs. This is different from consumers from developed countries who are more supportive toward the implemented CSR as evidenced by being willing to pay for products or services at high prices because these products or services are environmentally friendly (Arli & Lasmono, 2010) and they will even become more loyal to environmentally friendly products or services (Maignan, 2001).

The results of testing the effect of financial performance on firm value show a significant positive effect. The achievement of high financial performance will give a signal to investors that the company has succeeded in achieving good financial performance. This encourages investors to buy shares in the company. Investors will

have hopes of getting dividends and other benefits by buying shares of companies that have high financial performance. Modigliani & Miller (1958) state that firm value is determined by the earnings power of the company's assets. The positive effect of earnings power indicates that a greater profit and a more efficient turnover of assets occur if the firm has a higher earnings power which increases firm value. The ratio of the financial statements has a significant relationship with capital market indicators, which means that the information from the company financial statements still has a relevant value for investors in making decisions and explaining the scope of the stock market (Vishnani & Shah, 2008). The test results show that financial performance as a variable that mediates the effect of environmental performance on firm value is not proven. Based on table 4, environmental performance has no significant effect on financial performance. According to Baron & Kenny (1986) a variable is called a mediator if the variable influences the relationship between the predictor variable (independent) and the criterion variable (dependent). The mediation model has a hypothesis that the independent variable affects the mediator variable, which in turn affects the dependent variable. In this study, it cannot be proven that financial performance variable become a mediator variable between environmental performance and firm value. Unbelievably, most consumers in Indonesia do not pay attention to the environmental performance of the companies that produce the goods or services they are going to buy. Consumers only focus on the price of the goods or services to be purchased (Sarumpaet, 2005)

#### IV. CONCLUSION

This study aims to examine and analyze the effect of environmental performance on firm value by employing financial performance as mediator variable. By using secondary data taken from the Indonesia Stock Exchange in the 2014-2019 periods, the results reveal that the financial performance variable is not proven mediating the effect of environmental performance on firm value.

The limitation of this study is this research only uses one proxy, ROE, to measure financial performance. Future research is expected to use various proxies in measuring financial performance such as economic value added (EVA), market value added (MVA) to produce more accurate results.

#### REFERENCE

- Al-Tuwaijri, S.A., Christensen, T.E., & Hughes, K.E. (2004). The relations among environmental disclosure, environmental performance, and economic performance : A simultaneous equation approach. *Accounting, Organizations and Society*, 29(5), 447–471.
- Amato, L.H., & Amato, C.H. (2012). Environmental policy, rankings and stock values. *Business Strategy and The Environment*, 21(5), 317–325.
- Arli, D. I., & Lasmono, H. K. (2010). *Consumers ' perception of corporate social responsibility in*. 34(1979), 46–51. <https://doi.org/10.1111/j.1470-6431.2009.00824.x>
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research : Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182.
- Besley, S., & Brigham, E.F. (2008). *Essentials of Managerial Finance*.
- Brigham, E.F., & H. (2006). *Fundamental of financial management : Dasar-dasar manajemen keuangan* (10th ed.). Salemba Empat.
- Brigham, E.F., & Houston, J.E. (2011). *Dasar-dasar manajemen keuangan* (11th ed.). Erlangga.
- Cormier, D., Magnan, M. (2007). The revisited contribution of environmental reporting to investors valuation of a firms earnings : An international perspective. *Ecological Economics*, 62(3), 613–626.
- Filbeck, G., & Gorman, R.F. (2004). The relationship between the environmental and financial performance of public utilities. *Environmental and Resource Economics*, 29, 137–157.
- Harmono. (2009). *Manajemen keuangan berbasis balanced scorecard (Pendekatan teori,kasus, dan riset bisnis)*. Bumi Aksara.
- Ikhsan, A.A.N., & Muharam, H. (2016). Pengaruh kinerja lingkungan terhadap kinerja keuangan : studi pada perusahaan yang terdaftar di Kemetrian Lingkungan Hidup & Listing di BEI (Periode 2008 - 2014). *Diponegoro Journal of Management*, 5(3).
- Jacobs, B.W., Singhai, V.R., & Subramanian, R. (2010). An empirical investigation of environmental performance and the market value of the firm. *Journal of Operations Management*, 28(5), 430–441.
- Jumingan. (2011). *Analisis Laporan Keuangan*. Bumi Aksara.
- Peraturan Menteri Lingkungan Hidup, (2014).

- Maignan, I. (2001). Consumers perceptions of corporate social responsibility : A cross - cultural comparison. *Journal of Business Ethics*, 30(1), 57–72.
- Mardiana, J.A., & Wuryani, E. (2019). Pengaruh kinerja lingkungan terhadap nilai perusahaan dengan profitabilitas sebagai variabel pemoderasi. *Jurnal Akuntansi AKUNESA*, 8(1).
- Modigliani, F., & Miller, M.H. (1958). The cost of capital, corporate finance and the theory of investment. *The American Economic Review*, 48(3), 261–297.
- Moneva, J.M., & Cuellar, B. (2009). The value relevance of financial and non-financial environmental reporting. *Environmental and Resource Economics*, 44(3), 441–456.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations Management*, 10(3), 228–243.
- Ruf, B.M., Muralidhar, K., Brown, R.M., Janney, J.J., & Paul, K. (2001). An empirical investigation of the relationship between change in corporate social performance and financial performance : A stakeholder theory perspective. *Journal of Business Ethics*, 32(2), 143–156.
- Sarumpaet, S. (2005). The relationship between environmental performance and financial performance of Indonesian companies. *Jurnal Akuntansi Dan Keuangan*, 7(2), 89–98.
- Sholihin, M., & Ratmono, D. (2013). *Analisis SEM-PLS dengan WarpPLS 3.0 untuk Hubungan Nonlinier dalam Penelitian Sosial dan Bisnis*. ANDI.
- Tjahjono, S., & Eko, M. (2013). Pengaruh kinerja lingkungan terhadap nilai perusahaan dan kinerja keuangan. *Jurnal Ekonomi*, 4(1).
- Vishnani, S., & Shah, K. (2008). Value relevance of published financial statements with special emphasis on impact of cash flow reporting. *International Research Journal of Finance and Economics*, 17, 84–90.
- Widarjono, A. (2010). *Analisis Statistika Multivariat Terapan*. Sekolah Tinggi Ilmu Manajemen YKPN.
- Yadav, P.L., Hun Han, S., & Rho, J. J. (2015). Impact of environmental performance on firm value for sustainable investment: Evidence from large Us firms. *Business Strategy and The Environment*. <https://doi.org/10.1002/bse.1883>